Hetergoneity in Lifetime Earnings Risk

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Abstract

Abstract. This is our abstract. It is abstract.

Keywords:
JEL Codes:

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1 Introduction

This is an example citation [**?**].

Multiply all Coefficients by 100?

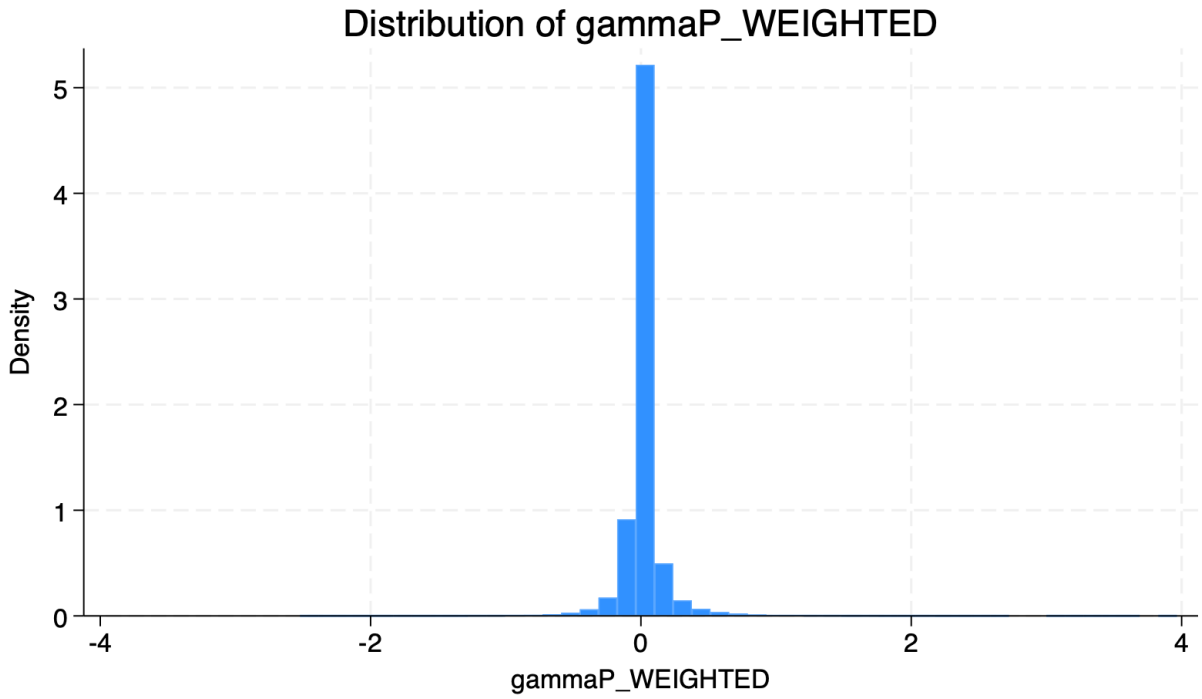

Figure 1: Distribution of gammaP_WEIGHTED

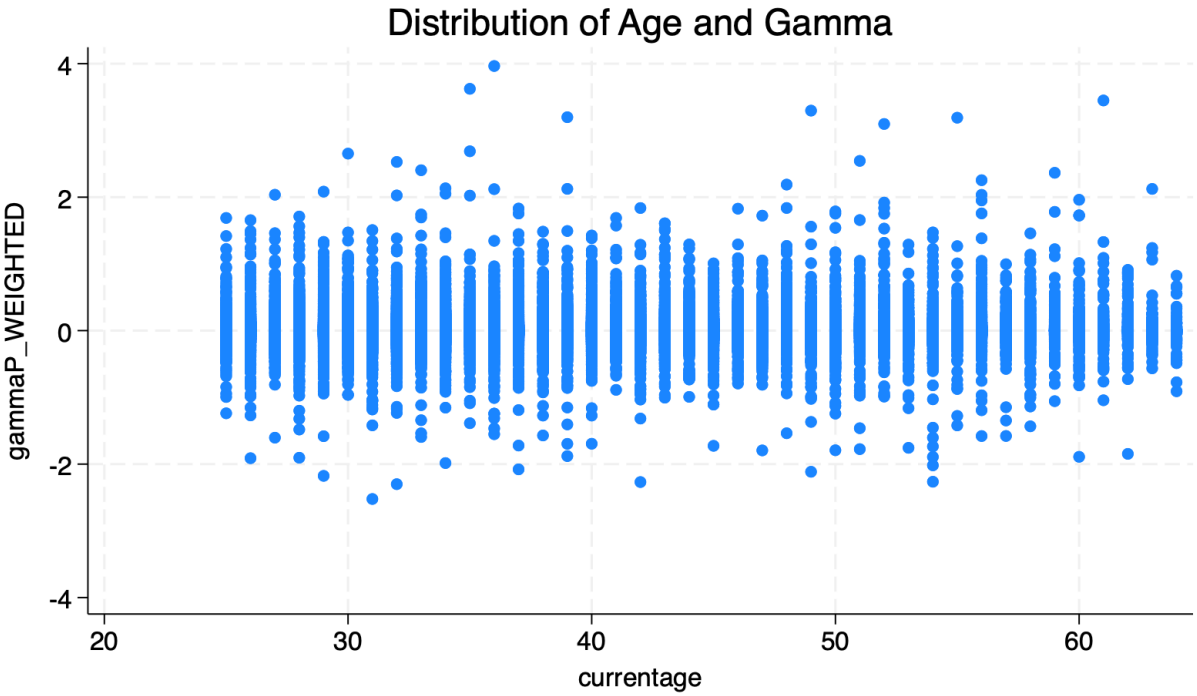

Figure 2: Scatterplot of Age vs. gammaP_WEIGHTED

Table 1: OLS Estimates for γ (Coefficients $\times$ 100)

	(1)	(2)	(3)	(4)	(5)
EDU1	-0.361	-0.360	-0.522^{*}	-0.597^{*}	-0.630^{**}
	(0.255)	(0.273)	(0.286)	(0.307)	(0.310)
EDU2	-0.283	-0.315^{*}	-0.418^{**}	-0.417^{*}	-0.455^{**}
	(0.175)	(0.181)	(0.193)	(0.216)	(0.219)
EDU3	-0.089	-0.063	-0.138	-0.114	-0.147
	(0.206)	(0.209)	(0.216)	(0.228)	(0.230)
PrRecess	-0.006	-0.038	-0.037	-0.040	-0.039
	(0.005)	(0.036)	(0.036)	(0.036)	(0.036)
rGDPgrow	-0.033	0.076	0.071	0.063	0.058
	(0.033)	(0.172)	(0.172)	(0.172)	(0.172)
fhwage0_P0	-0.006	0.004	0.005	0.002	0.004
	(0.025)	(0.027)	(0.027)	(0.028)	(0.028)
ma5aep	0.004	0.003	0.004	0.004	0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
veteran	0.021	-0.003	0.053	0.018	0.040
	(0.141)	(0.151)	(0.153)	(0.154)	(0.155)
OLF	0.627	0.584	0.550	0.619	0.625
	(0.627)	(0.628)	(0.628)	(0.629)	(0.629)
tenure	-0.010	-0.009	-0.008	-0.012	-0.010
	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)
currentage	0.874^{**}	0.936^{**}	0.926^{**}	0.919^{**}	0.907^{**}
	(0.380)	(0.384)	(0.385)	(0.385)	(0.385)
currentagesq	-0.023^{**}	-0.025^{***}	-0.025^{***}	-0.025^{***}	-0.024^{***}
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
currentagecube	0.0002^{***}	0.0002^{***}	0.0002^{***}	0.0002^{***}	0.0002^{***}
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Occupation Controls				✓	✓
Industry Controls			✓		✓
Other Controls		✓	✓	✓	✓

Notes: Standard errors in parentheses. Other controls include state, year, race, and cohort fixed effects. Statistical significance: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. All coefficients and standard errors are multiplied by 100 for easier interpretation.

Table 2: Stepwise Results for γ

	(1)	(2)	(3)	(4)	(5)
EDU1	selected	2	2	selected	selected
EDU2	selected	1	1	selected	selected
EDU3	6	10	8	6	6
PrRecess	1	3	3	1	1
rGDPgrow	4	4	4	4	4
fhwage0_P0	7	11	13	9	9
ma5aep	2	6	6	3	3
veteran	8	12	12	10	11
OLF	3	5	5	2	2
tenure	5	7	9	5	5
currentage	selected	selected	selected	selected	selected
currentagesq	selected	selected	selected	selected	selected
currentagecube	selected	selected	selected	selected	selected
Occupation Controls	-	-	-	selected	selected
Industry Controls	-	-	7	-	10
Cohort Controls	-	8	10	7	7
Race Controls	-	13	14	11	12
Year Controls	-	9	11	8	8
State Controls	-	selected	selected	selected	selected
Occupation Controls				✓	✓
Industry Controls			✓		✓
Other Controls		✓	✓	✓	✓

Notes: This table reports results from stepwise regression models using a p-value threshold of 0.05. "Selected" indicates variables retained in the final model. Numbers indicate the order of variable removal (with 1 being the last variable removed before model finalization). "-" indicates the variable was not included in the initial model specification.

Table 3: Lasso Results for γ

	(1)	(2)	(3)	(4)	(5)
EDU1	(3)	(3)	(2)	(1)	(1)
EDU2	(2)	(1)	(1)	(1)	(1)
EDU3	(8)	(7)	(6)	(6)	(4)
PrRecess	(4)	Not Selected	Not Selected	Not Selected	Not Selected
rGDPgrow	(6)	Not Selected	Not Selected	Not Selected	Not Selected
fhwage0_P0	(7)	(9)	(9)	(8)	(6)
ma5aep	(1)	(2)	(1)	(2)	(1)
veteran	(10)	(8)	(8)	(7)	(5)
OLF	(3)	(2)	(3)	(1)	(1)
tenure	(5)	(4)	(4)	(3)	(2)
currentage	(9)	(6)	(7)	(5)	(4)
currentagesq	(11)	(10)	(10)	(8)	(7)
currentagecube	(2)	(5)	(5)	(4)	(3)
Occupation Controls	-	-	-	Selected	Selected
Industry Controls	-	-	Selected	-	Selected
Cohort Controls	-	Selected	Selected	Selected	Selected
Race Controls	-	Selected	Selected	Selected	Selected
Year Controls	-	Selected	Selected	Selected	Selected
State Controls	-	Selected	Selected	Selected	Selected
Occupation Controls				✓	✓
Industry Controls			✓		✓
Other Controls		✓	✓	✓	✓

Notes: This table reports variables selected by Lasso regression with Bayesian Information Criterion (BIC) variable selection. "Selected" indicates variables retained in the final model. Numbers in parentheses indicate the order in which variables were added to the model. "-" indicates the variable was not included. "Not Selected" indicates the variable was not selected by Lasso but was provided in the model specification.

Table 4: Lasso and SHAP Results for Occupations

Occupation	LASSO Order	SHAP Rank	Occupation	LASSO Order	SHAP Rank
Fisher/Hunter (64)	(1)	(67)	Salesperson (49)	(24)	(54)
Aerospace/Marine Engineer (4)	(2)	(17)	Spinner/Weaver (75)	(25)	(64)
Music/Perform (17)	(3)	(29)	Bricklay/Carpt (95)	(25)	(19)
Dr./Dentist/Vet (6)	(4)	(22)	Bookkeepr/Cash (33)	(26)	(52)
Transp. Attend (35)	(5)	(72)	ComputerOperat (34)	(26)	(34)
Lumbrman/Axman (73)	(5)	(48)	Rest./StoreMgr (50)	(26)	(39)
Prof. Athlete (18)	(7)	(47)	SecurityServic (58)	(26)	(38)
Buyer (42)	(7)	(49)	Machine Fitter (84)	(26)	(3)
Eng. Tech. Expert (3)	(9)	(44)	Convey. Oper. (97)	(27)	(12)
Service Worker (59)	(10)	(35)	Domestic Help (54)	(28)	(41)
Farm Manager (61)	(10)	(4)	Forestry Work (63)	(28)	(59)
Jewelry Maker (88)	(10)	(60)	RelatMedicalJob (7)	Not selected	(36)
Chemist (1)	(13)	(5)	Mathematician (8)	Not selected	(24)
Lawyer (12)	(13)	(66)	Cleric (14)	Not selected	(40)
Educator (13)	(13)	(13)	Sculptr/Paintr (16)	Not selected	(71)
Author (15)	(13)	(45)	Scientist (19)	Not selected	(30)
Stenographer (32)	(13)	(46)	Agriculturist (21)	Not selected	(1)
Transport. Oper (98)	(13)	(8)	Office Manager (30)	Not selected	(69)
Insurance Rep. (44)	(17)	(53)	Administrator (31)	Not selected	(50)
Broadcaster (86)	(17)	(56)	Conductor (36)	Not selected	(65)
Painter (93)	(17)	(25)	Mailman (37)	Not selected	(9)
Tailor (79)	(19)	(20)	Tel. Operator (38)	Not selected	(42)
Stat. Mach. Oper (96)	(19)	(41)	Ofc.Worker Etc (39)	Not selected	(55)
Architect/Engineer (2)	(20)	(11)	HH Supervisor (52)	Not selected	(77)
Vendor (45)	(20)	(10)	Dry-Cleaner (56)	Not selected	(63)
Legislator (20)	(21)	(27)	Hair Stylist (57)	Not selected	(75)
Tech.Salespers (43)	(21)	(58)	Farm Hand (62)	Not selected	(51)
Janitor (55)	(21)	(26)	Inspector (70)	Not selected	(7)
Agriculturladm (60)	(21)	(2)	Miner (71)	Not selected	(70)
Food Producer (77)	(21)	(37)	Foundry Worker (72)	Not selected	(68)
Tool/Die Maker (83)	(21)	(16)	ChemicalWorker (74)	Not selected	(61)
Pipe Fitter (87)	(21)	(43)	Shoemaker (80)	Not selected	(62)
Labor/Craftsmn (99)	(22)	(18)	Cabinet Maker (81)	Not selected	(73)
Accountant (11)	(23)	(15)	Stone Cutter (82)	Not selected	(76)
BusinessManagr (40)	(23)	(33)	Electr. Enginr (85)	Not selected	(21)
Cook/Waiter (53)	(23)	(28)	Glazier (89)	Not selected	(74)
Life/Physical Scientist (5)	(24)	(31)	Printer Etc. (92)	Not selected	(57)
Economist (9)	(24)	(14)	Manufacturer (94)	Not selected	(78)
			Soldier (101)	Not selected	(23)
			Other (999)	Not selected	(32)

Notes: This table reports occupations selected by Lasso regression with Bayesian Information Criterion (BIC) for predicting earnings risk. "LASSO Order" indicates the order in which variables would enter the model if the penalty were relaxed. "SHAP Rank" shows the variable importance ranking based on SHAP values (lower numbers indicate greater importance). Note that the BIC-optimal model contained no occupation variables.

Table 5: Lasso and SHAP Results for Industries

Industry	LASSO Selection Order	SHAP Ranking
Construction (14)	(1)	(7)
Other Services (30)	(1)	(4)
Clothing/Text. (12)	(3)	(18)
Educ./Sport (27)	(3)	(22)
Public Admin. (33)	(3)	(10)
Chemicals (5)	(6)	(9)
Health Service (28)	(6)	(29)
Agric.,Forestry (1)	(8)	(20)
Other Trans. (21)	(9)	(6)
Service Indust (25)	(9)	(21)
Postal System (20)	(11)	(24)
Mechanical Eng. (9)	(12)	(2)
Wood/Paper/Print (11)	(12)	(17)
Earth/Clay/Stone (7)	(14)	(16)
Volunt./Church (31)	(14)	(28)
Wholesale (16)	(16)	(5)
Train System (19)	(17)	(3)
Insurance (23)	(17)	(25)
Electrical Eng. (10)	(19)	(11)
Legal Services (29)	(19)	(13)
Synthetics (6)	(21)	(23)
Volunt./Church (31)	(21)	(28)
Food Industry (13)	(23)	(30)
Financial Inst. (22)	(24)	(19)
Iron/Steel (8)	(25)	(26)
Energy/Water (3)	(26)	(1)
Mining (4)	(27)	(12)
Restaurants (24)	(28)	(27)
Other industries	Not selected	Various

Notes: This table reports industries selected by Lasso regression with Bayesian Information Criterion (BIC) for predicting earnings risk. "LASSO Selection Order" indicates the order in which variables would enter the model if the penalty were relaxed. "SHAP Ranking" shows the variable importance ranking based on SHAP values (lower numbers indicate greater importance). Note that the BIC-optimal model contained no industry variables.

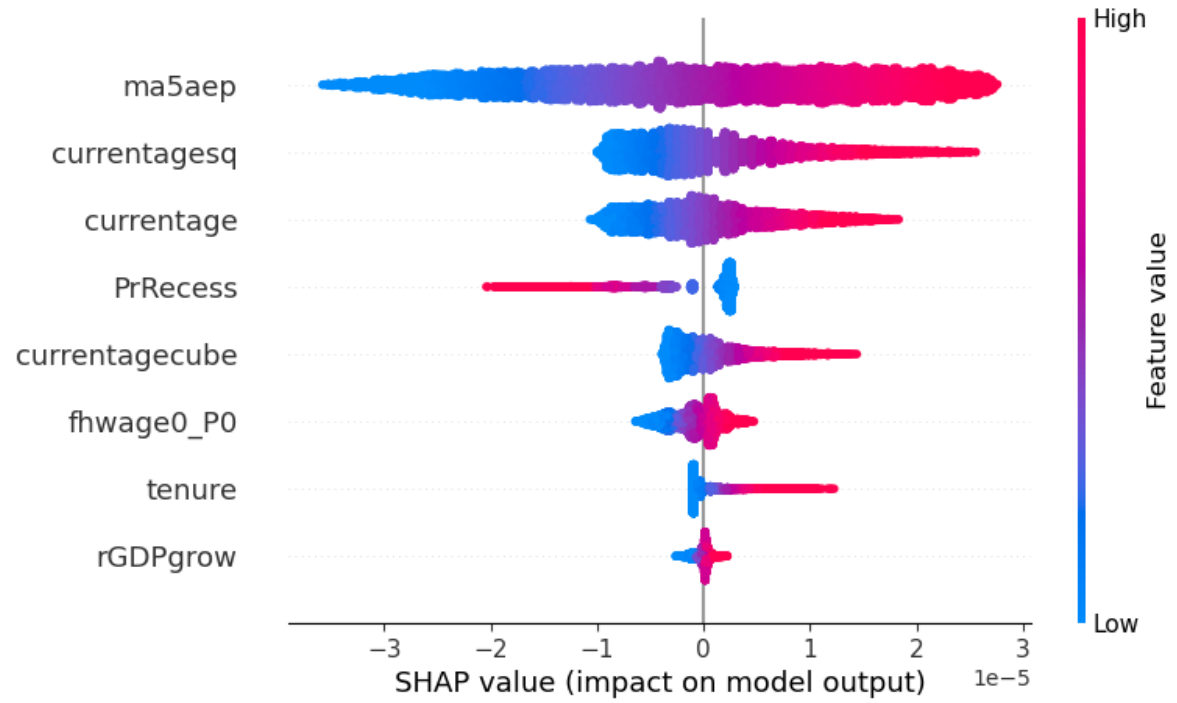

Figure 3: SHAP Summary Plot

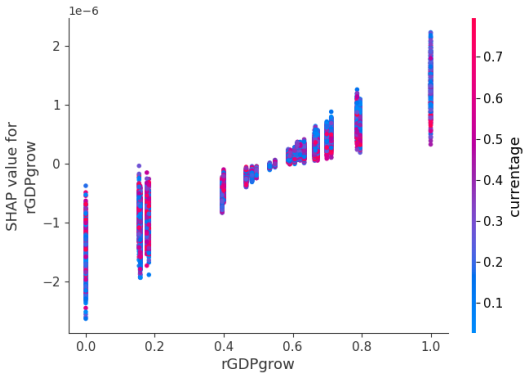

Figure 4: GDP by Age

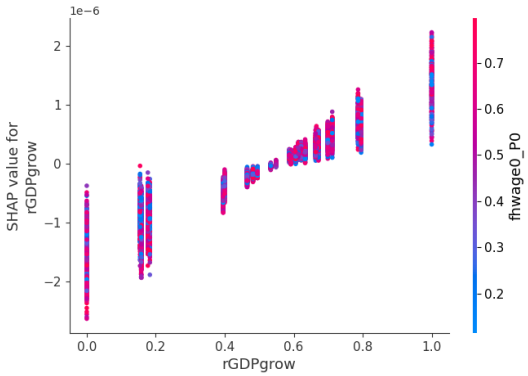

Figure 5: GDP by Income

References